

Name: _____ Date: _____

Polynomial Factoring EXAM (version 660)

1. The quadratic formula says if $ax^2 + bx + c = 0$ then $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$. Use the quadratic formula to solve the following equation.

$$x^2 + 4x + 31 = 0$$

Simplify your answer(s) as much as possible.

2. Express the product of $-2 + 8i$ and $-7 - 5i$ in standard form $(a + bi)$.

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3. Write function $f(x) = x^3 + 7x^2 + 4x - 12$ in factored form. I'll give you a hint: one factor is $(x + 2)$.

4. Polynomial p is defined below in factored form.

$$p(x) = -(x + 4)^2 \cdot (x + 1)^2 \cdot (x - 2)^2 \cdot (x - 5)$$

Sketch a graph of polynomial $y = p(x)$.

